CLAIMS

What is claimed is:

1   1.   A data transmission packet, comprising:
2   a routing control list identifying a node responsible for passing the packet;
3   routing control data identifying a first communication media to be used to pass the
4   packet to the identified node and a second communication media to be used to pass the
5   packet from the identified node; and
6   a data field containing electronic data being transmitted by the packet.

1   2.   The packet of Claim 1, wherein the routing control list identifies a plurality of
2   nodes responsible for passing the packet, and wherein, for each identified node, the routing
3   control data identifies a communication media to be used to pass the electronic data to
4   that node and another communication media to be used to pass the electronic data
5   from that node.

1   3..   The packet of Claim 2, wherein the routing control list also identifies a
2   successive order in which the packet is to be passed from a first node to a second node and
3   wherein the routing control data identifies that communication media to be used to pass the
4   packet from the first node is the same communication media to be used to pass the packet
5   to the second node.

1   4.   The packet of Claim 2, wherein the routing control list includes, for each of
2   the plurality of nodes, a plurality of bits that identify that node.

1   5.   The packet of Claim 1, wherein the routing control data includes a first bit
2   identifying the first communication media and a second bit identifying the second
3   communication media.

1   6.   The packet of Claim 5, wherein the routing control data further includes a
2   third bit used to request that data be returned to a source node and a fourth bit identifying
3   the data to be returned.

Attorney Docket Number
Case: 01-006-1/4147

1   7.   The packet of Claim 1, further comprising a length field identifying a length of
2   the packet.

1   8.   A computer readable medium having instructions for:
2   generating a routing control list identifying a node responsible for passing electronic
3   data;
4   generating routing control data identifying a first communication media to be used to
5   pass the electronic data to the identified node and a second communication media to be
6   used to pass the electronic data from the identified node; and
7   assembling a packet containing the routing control list, the routing control data,
8   and the electronic data.

1   9.   The medium of Claim 8, wherein the instructions for generating a routing
2   control list include instructions for generating a routing control list identifying a plurality of
3   nodes responsible for passing the packet, and wherein the instructions for generating
4   routing control data include instructions for generating routing control data identifying, for
5   each node identified by the routing control list, a communication media to be used to pass
6   the electronic data to that node and another communication media to be used to pass the
7   electronic data from that node.

1   10.   The medium of Claim 9, wherein the instructions for generating a routing
2   control list include instruction for generating a routing control list that identifies a successive
3   order in which the packet is to be passed from a first node to a second node and wherein
4   the instructions for generating routing control data include instructions for generating routing
5   control data identifying that the communication media to be used to pass the packet from
6   the first node is the same communication media to be used to pass the packet to the
7   second node.

1   11.   The medium of Claim 9, wherein the instructions for generating a routing
2   control list includes generating a routing control list that includes, for each of the plurality of
3   nodes, a plurality of bits that identify that node.

1   12.   The medium of Claim 8, wherein the instructions for generating the routing
2   control data include instructions for generating routing control data that includes a first bit
3   identifying the first communication media and a second bit identifying the second
4   communication media.

1   13.   The medium of Claim 12, wherein the instructions for generating the routing
2   control data include instructions for generating routing control data that includes a third bit
3   used to request that data be returned and a fourth bit identifying the data to be returned.

1   14.   The medium of Claim 8, further comprising generating a length field, and
2   wherein the instructions for assembling include instructions for assembling a packet
3   containing the length field, the routing control list, the routing control data, and the
4   data to be transmitted.

1   15.   A computer readable medium having instructions for:
2   obtaining a first routing control list and a first routing control data from an originating
3   packet, the routing control list identifying a node responsible for passing the originating
4   packet, and the routing control data specifying a first communication media for passing the
5   originating packet to the node and a second communication media used to pass the
6   originating packed from the node;
7   generating a second routing control list identifying the node;
8   generating a second routing control data specifying the second communication
9   media is to be used to pass a response packet to the node and that the first communication
10   media is to be used to pass the response packet from the node; and
11   assembling the response packet from the second routing control list, the second
12   routing control data, and data, if any, to be returned in response to the originating packet.

1   16.   The medium of Claim 15, wherein the first routing control data includes a first
2   bit identifying the first communication media and a second bit identifying the second
3   communication media, and wherein the instructions for generating a second routing control
4   data include instructions for generating a second routing control data that includes:
5   a first bit equal to the second bit of the first routing control data; and

6   a second bit equal to the first bit of the first routing control data.

1   17.   The medium of Claim 15, having further instructions for generating a length

2   field identifying a length of the response packet, and wherein the instructions for assembling

3   include instructions for assembling the response packet from the length field, the second

4   routing control list, the second routing control data, and data, if any, to be returned in

5   response to the originating packet.

1   18.   A computer readable medium having instructions for:

2   obtaining a first routing control list and a first routing control data from an originating

3   packet, the routing control list identifying a plurality of nodes responsible for passing the

4   originating packet, and the routing control data specifying, for each node identified by the

5   routing control list, a communication media used to pass the originating packet to that node

6   and another communication media used to pass the originating packed from that node;

7   generating a second routing control list by reversing the order in which the first

8   routing control list identifies the plurality of nodes;

9   generating a second routing control data that, for each node identified by the second

10   routing control list, specifies:

11   a communication media to be used to pass a response packet to that

12   node that is the same communication media used to pass the originating

13   packet from that same node; and

14   another communication media to be used to pass the response packet

15   from that node that is the same communication media used to pass the

16   originating packet to that same node; and

17   assembling the response packet from the second routing control list, the second

18   routing control data, and data, if any, to be returned in response to the originating packet.

1   19.   The medium of Claim 18, wherein, for each node identified by the first routing

2   control list, the routing control data includes a first bit identifying a first communication

3   media used to pass the originating packet to that node and a second bit identifying a

4   second communication media used to pass the originating packet from that node, and

5   wherein the instructions for generating a second routing control data include instructions for

6   generating a second routing control data that includes, for each node identified by the

7   second routing control list:

8   a first bit equal to the second bit of the first routing control data that corresponds to

9   the same node; and

10   a second bit equal to the first bit of the first routing control data that corresponds to

11   the same node.

1   20.   The medium of Claim 18, having further instructions for generating a length

2   field identifying a length of the response packet, and wherein the instructions for assembling

3   include instructions for assembling the response packet from the length field, the second

4   routing control list, the second routing control data, and data, if any, to be returned in

5   response to the originating packet.